C. 3

l States
rment of
ture

Natural
Resources
Conservation
Service

Idaho
Basin Outlook Report
May 1, 1997

Basin Outlook Reports
and
Federal - State - Private
Cooperative Snow Surveys

For more water supply and resource management information, contact:

Your local Natural Resources Conservation Service Office
or
Natural Resources Conservation Service
Snow Surveys
3244 Elder Street, Room 124
Boise, ID 83705-4711
(208) 378-5740

How forecasts are made

Most of the annual streamflow in the Western United States originates as snowfall that has accumulated high in the mountains during winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Predictions are based on careful measurements of snow water equivalent at selected index points. Precipitation, temperature, soil moisture and antecedent streamflow data are combined with snowpack data to prepare runoff forecasts. Streamflow forecasts are coordinated by Natural Resources Conservation Service and National Weather Service hydrologists. This report presents a comprehensive picture of water supply conditions for areas dependent upon surface runoff. It includes selected streamflow forecasts, summarized snowpack and precipitation data, reservoir storage data, and narratives describing current conditions.

Snowpack data are obtained by using a combination of manual and automated SNOTEL measurement methods. Manual readings of snow depth and water equivalent are taken at locations called snow courses on a monthly or semi-monthly schedule during the winter. In addition, snow water equivalent, precipitation and temperature are monitored on a daily basis and transmitted via meteor burst telemetry to central data collection facilities. Both monthly and daily data are used to project snowmelt runoff.

Forecast uncertainty originates from two sources: (1) uncertainty of future hydrologic and climatic conditions, and (2) error in the forecasting procedure. To express the uncertainty in the most probable forecast, four additional forecasts are provided. The actual streamflow can be expected to exceed the most probable forecast 50% of the time. Similarly, the actual streamflow volume can be expected to exceed the 90% forecast volume 90% of the time. The same is true for the 70%, 30%, and 10% forecasts. Generally, the 90% and 70% forecasts reflect drier than normal hydrologic and climatic conditions; the 30% and 10% forecasts reflect wetter than normal conditions. As the forecast season progresses, a greater portion of the future hydrologic and climatic uncertainty will become known and the additional forecasts will move closer to the most probable forecast.

IMPORTANT NOTICE - REVISION OF MAILING LIST

THIS NOTICE IS REQUIRED BY THE CONGRESSIONAL JOINT COMMITTEE ON PRINT FOR THE ANNUAL REVISION OF FREE MAILING LIST.

The Basin Outlook report is available on the internet at http://id.nrcs.usda.gov/ allowing you to obtain the Basin Outlook reports several days before this mailing. Other water supply products are available on the internet.

☐ Please check this box if you prefer internet access and can be removed from our mailing list.

The Basin Outlook Report for Idaho is published and distributed as a public service by the USDA, Natural Resources Conservation Service from January to May each year. In order to control the cost of this publication and ensure maximum use of the information we are required to examine our circulation annually.

Please mark the BASIN REPORT(S) you would like to receive.

[ ] G - General Outlook Report (mailed to all recipients)

[ ] #1 - Panhandle Region

[ ] #2 - Clearwater River Basin

[ ] #3 - Salmon River Basin

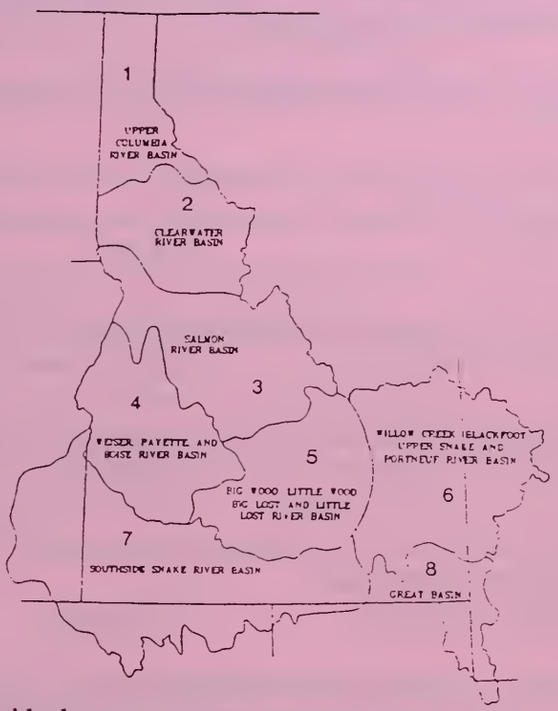
[ ] #4 - Weiser, Payette, Boise River Basins

[ ] #5 - Wood and Lost River Basins

[ ] #6 - Upper Snake River Basin

[ ] #7 - Southside Snake River Basins

[ ] #8 - Bear River Basin



[ ] - Annual Data Summary Report (published after each water year, it contains individual snow course measurements, snow water equivalant and precipitation data from SNOTEL (SNOw TELemetry) stations, and the 1961-90 averages)

The above report is also available on the Centralized Forecast System (CFS) computer in Portland, Oregon. A terminal or computer with communication software, modem and phone line are required. Please contact the snow survey office if you are interested in computer access at (208) 378-5740.

[ ] Check if you selected different basins than you currently receive

[ ] Check if you no longer wish to receive the Basin Outlook Report for Idaho

NAME:
AFFILIATION:
ADDRESS:

IS YOUR ADDRESS CORRECT?
[ ] YES [ ] NO
If NO, please make corrections.

OMB Authorization No. 0505-0020

Snow Survey and Water Supply Forecasting Government Performance Review Act Survey

The Natural Resources Conservation Service (NRCS), Snow Survey and Water Supply Forecasting Program has been designated as a pilot program under the Government Performance Review Act. As a registered user of the Centralized Forecasting System (CFS), you represent an important portion of the NRCS customer base.

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB number for this information is 0505-0020. The time to complete this information collection is estimated to average one minute per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

Please take a few minutes to answer all four of the following questions:

Do you use information provided by the Natural Resources Conservation Service, Snow Survey and Water Supply Forecasting Program to make water use and management decisions?

❑ Yes ❑ No

How satisfied are you with the timeliness of the electronic and/or printed information provided to you by the NRCS?

❑ Very Satisfied ❑ Satisfied ❑ Dissatisfied ❑ Very Dissatisfied

How satisfied are you with the usefulness of the water supply forecast information provided to you by the NRCS?

❑ Very Satisfied ❑ Satisfied ❑ Dissatisfied ❑ Very Dissatisfied

How satisfied are you with the responsiveness of NRCS snow survey and water supply personnel to your requested needs for information?

❑ Very Satisfied ❑ Satisfied ❑ Dissatisfied ❑ Very Dissatisfied

To file a complaint, write the Secretary of Agriculture, Washington, DC, 20250, or call 1-800-245-6340 (voice) or (202) 720-1127 (TDD). USDA is an equal opportunity employer

---

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
3244 Elder Street, Room 124
Boise, Idaho 83705-4711

AN EQUAL OPPORTUNITY EMPLOYER

Postage Required

USDA Natural Resources Conservation Service
Snow Survey Office
3244 Elder Street, Room 124
Boise, Idaho 83705-4711

IDAHO WATER SUPPLY OUTLOOK REPORT

MAY 1, 1997

SUMMARY

The potential for snow melt flooding and extreme streamflow peaks is real this year due to near record snow levels and high volume streamflow forecasts. The longer the snow remains in the higher elevations, the greater the potential for high streamflows and more severe flooding. A cool wet April brought well above normal precipitation across the state. Elevations above 8,000 feet continued accumulating snow while mid-elevation snowpacks started melting. April streamflows were 130-200% of normal, mainly a result of the high April precipitation and melting in mid-elevations. Snowpacks currently range from 130-160% of average across the state. Many reservoirs have been drafted to their lowest spring levels since they were first built in anticipation of this year's high runoff. Streamflow forecasts call for 130-180% of average for most streams with some central and north Idaho streams forecast at record volumes.

SNOWPACK

The snow continued accumulating in April at measuring stations above 7,800 feet in central and eastern Idaho while mid-elevation stations started melting. As a result of the delayed melt, snowpack percentages increased 10-30 percentage points from last month. ***This means the higher elevation snowpack has not started melting yet, and there is an extreme amount of snow to melt!*** Many individual snow measuring stations are reporting snow water content levels near or above their maximum May 1 levels. Overall, this will be a snow year to remember! Of the eight major river basins across the state, the Clearwater basin (166% of average) and upper Snake River basins (162%) are the second highest since records started in 1961. The Panhandle Region and the Salmon basin are the fourth highest at 145% of average. The central Idaho basins are the fifth and sixth highest at 140-150% of average. The snowpack in the southern Idaho basins and the Bear River basin is the seventh highest since 1961.

PRECIPITATION

A cool wet April brought above normal precipitation across the entire state. Cool temperatures kept melt rates below normal in mid-elevations and allowed the snowpack to continue accumulating in higher elevation areas. April precipitation was 160-170% of average in the Salmon, west-central mountains, and basins south of the Snake River. Elsewhere in the state, April precipitation was 130-140% of average. Precipitation for the water year ranges from a high of 150% of average in the Weiser-Payette-Boise basins to 128% in the Southside Snake River basins. Any additional precipitation received during the snow melt season will only add to the already high streamflow forecast volumes.

RESERVOIRS

Most major reservoirs across the state were drafted in preparation for this season's high runoff. Flood control operations will likely continue until peak inflows occur in late May or June. The irrigation season has started, and many canal systems are being used for flood control in passing excess flow. The Boise system is 40% full, the lowest April 30 storage since Lucky Peak was built in 1955. The Boise system will gradually start filling in May and complete filling after the peak inflows have passed. The Payette system is about half full. Brownlee Reservoir is one third full, the lowest April 30 level in years. Coeur d'Alene Lake is currently more than twice its summer storage level; Dworshak Reservoir is at its lowest April 30 storage level since 1972 when the reservoir was built. Little Wood and Mackay reservoirs are about half full; Magic Reservoir is at 94% of capacity. The eight major reservoirs in the upper Snake system are 53% of capacity. Owyhee and Wildhorse reservoirs are already full. Precautionary releases were made from Oakley and Salmon Falls reservoirs which are currently about 58% full. The major reservoirs across the state will fill, and summer drawdown of irrigation reservoirs will be delayed because of sustained high flows after the streams peak.

Note: NRCS reports reservoir information in terms of usable volumes, which includes both active, inactive, and in some cases dead storage. Other operators may report reservoir contents in different terms. For additional information, see the reservoir definitions at the end of this report.

STREAMFLOW

The likelihood of high streamflow peaks and flooding is real this year, a result of the abundant snow levels. Spring precipitation and air temperatures during the snow melt season will determine the magnitude and timing of streamflow peaks across the state. Moderate air temperatures with little or no precipitation this spring will help melt the snow gradually. April streamflows were above average throughout the state. This was largely a result of the well above average April precipitation and snowpack melting in the low and mid-elevations. April streamflow percentages ranged from almost 200% of average in the Boise basin to near average in the Owyhee basin with most streams reporting in the 130-160% of average range. May-July streamflow forecasts are for near record volumes for the Coeur d'Alene, St. Joe, NF Clearwater, Payette and Boise rivers. Elsewhere across the state, the forecasts remain high except for the Owyhee basin which is forecast slightly above normal. The Panhandle, Clearwater and Salmon basins are forecast at 150-190% of the May-July average. The central mountain streams (Payette, Boise, Wood and Lost basins) are forecast at 170-190% of average. The upper Snake and Bear river basins are forecast at 130-160% of average. The high desert streams across southern Idaho are projected at 125-160% of average for the residual periods.

RECREATION OUTLOOK

Snowpack levels across most of Idaho are in the top seven highest years since 1961 and a guarantee there will be an abundance of water this season. Snowpack percentages currently range from 140-170% of average across the state with some measuring stations setting new maximum May 1 snow water content levels. All major streams in Idaho are forecast at 130-190% of average and will provide an extended boating season after the snow melt streamflow peaks pass. High snowpacks and seasonal volumes also have the potential to produce high peak flows this season. The magnitude and timing of the streamflow peaks depend upon spring air temperatures and precipitation during the snow melt season. Novice river runners should be aware of the hazards of high flows and cold water and exercise caution until water levels drop to a safe level. Currently, many reservoirs have been drafted to record low storage levels in preparation for this season's high runoff. These reservoirs will fill after the streamflow peaks occur and should remain full well into the summer. Backcountry access may be delayed this year because of deep snow levels, washed out roads or trails, and downed trees.

WATER SUPPLY FORECASTING PRODUCTS ON THE INTERNET

Water Supply Forecasting products are now available on the INTERNET. These products include the SNOTEL Update Reports, State Basin Outlook Reports, and products previously published in the Water Supply Outlook for the Western United States.

The Universal Resource Locator (URL) for our home page is: http://id.nrcs.usda.gov
You can access the Anonymous FTP server by pointing your INTERNET browser (Netscape, Mosaic, etc.) to: ftp://ftp.wcc.nrcs.usda.gov

We will continue to add more products to our Home Page and Anonymous FTP server and welcome any comments and suggestions you might have. Questions and comments should be directed to the NRCS Snow Survey.

Natural Resources Conservation Service
Snow Survey Staff
3244 Elder Street, Room 124
Boise, Idaho 83705-4711
Phone (208) 378-5740
Email snow@id.nrcs.usda.gov

IDAHO SURFACE WATER SUPPLY INDEX (SWSI)
As of May 1, 1997

The surface water supply index (swsi) is predictive indicator of surface water availability within a watershed for the spring and summer water use season. The index is calculated by combining pre-runoff reservoir storage (carryover) with forecasts of spring and summer streamflow. SWSI values are scaled from +4.1 (abundant supply) to -4.1 (extremely dry), with a value of zero indicating a median water supply as compared to historical occurrences.

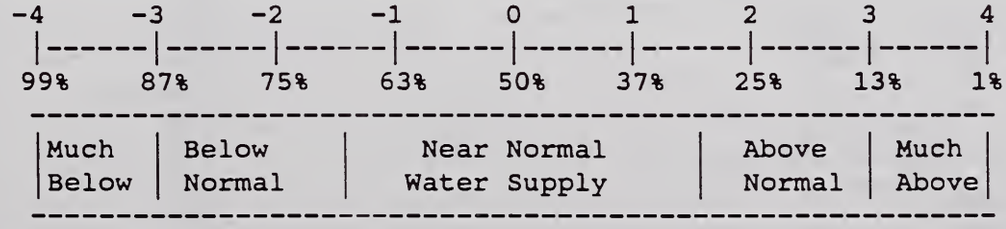
SWSI values are published January through May, and provide a more comprehensive outlook of water availability than either streamflow forecasts or reservoir storage figures alone. The SWSI index allows comparison of water availability between basins for drought or flood severity analysis. Threshold SWSI values have been established for most basins to indicate the potential for agricultural water shortages.

The following agencies and cooperators provide assistance in the preparation of the Surface Water Supply Index for Idaho:

US Department of Commerce, National Weather Service
US Bureau of Reclamation
Idaho Water Users Association
US Army Corps of Engineers
Idaho Department of Water Recourses
PacifiCorp

BASIN or REGION	*SWSI Value*	*Most Recent Year With Similar SWSI Value*	*Agricultural Water Supply Shortage May Occur When SWSI is Less Than*
PANHANDLE	3.9	1972	NA
CLEARWATER	3.0	1975	NA
SALMON	3.6	1984	NA
WEISER	1.3	1978	NA
PAYETTE	4.1	1974	NA
BOISE	4.1	1965	-2.6
BIG WOOD	3.5	1982	-1.4
LITTLE WOOD	2.8	1984	-2.1
BIG LOST	2.8	1986	-0.8
LITTLE LOST	3.6	1965	0.0
HENRYS FORK	3.7	1982	-3.3
SNAKE (AMERICAN FALLS)	3.0	1982	-2.0
OAKLEY	2.0	1985	0.0
SALMON FALLS	3.3	1976	0.0
BRUNEAU	3.6	1971	NA
OWYHEE	2.0	1996	NA
BEAR RIVER	1.4	1982	-3.8

SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION



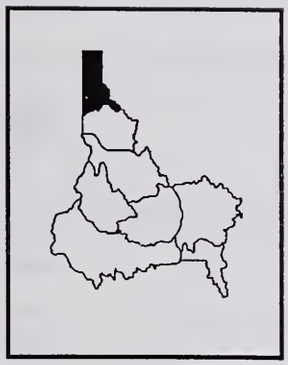
Note: The Percent Chance of Exceedance is an indicator of how often a range of SWSI values might be expected to occur. Each SWSI unit represents about 12% of the historical occurrences. As an example of interpreting the above scale, the SWSI can be expected to be greater than -3.0, 87% of the time and less than -3.0, 13% of the time. Half the time, the SWSI will be below and half the time above a value of zero. The interval between -1.5 and +1.5 described as "Near Normal Water Supply", represents three SWSI units and would be expected to occur about one third (36%) of the time.

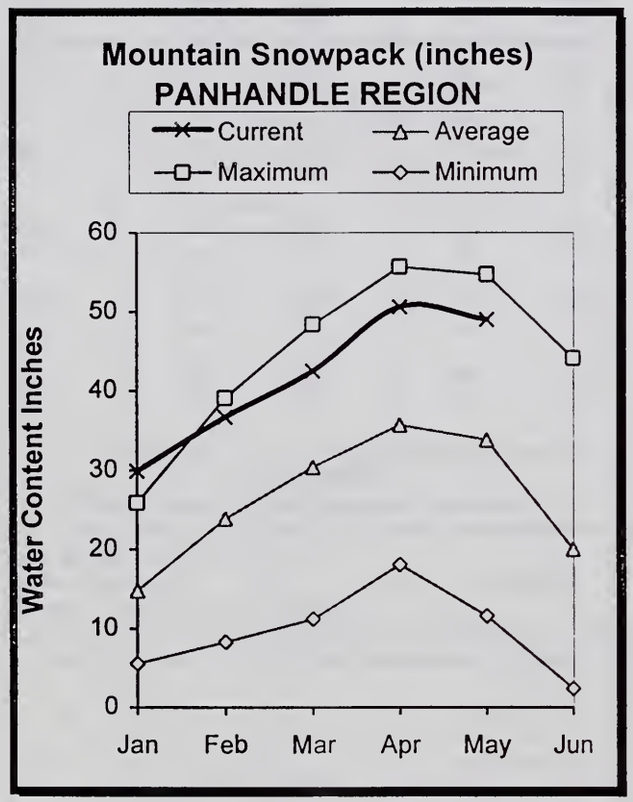
B A S I N - W I D E S N O W P A C K S U M M A R Y

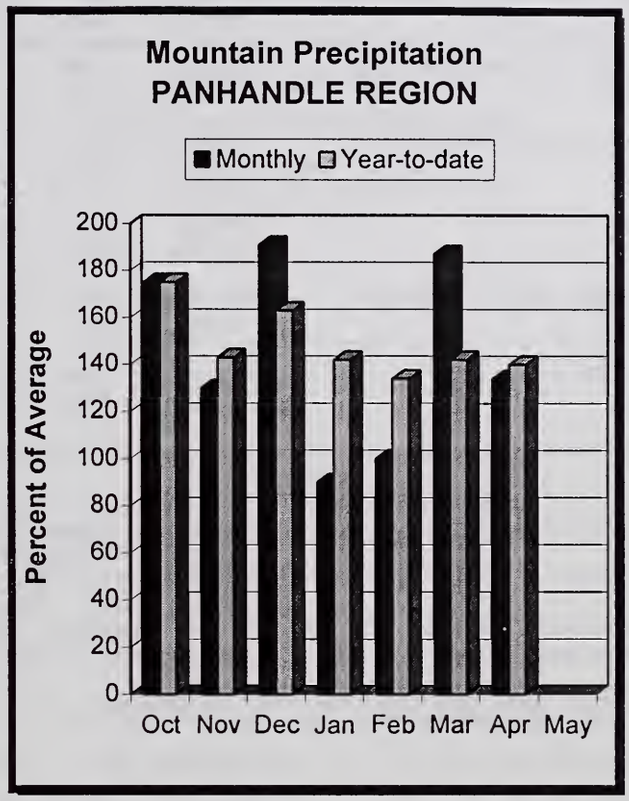
MAY 1997

BASIN	PERCENT OF LAST YEAR	PERCENT OF AVERAGE
Kootenai ab Bonners Ferry	154%	153%
Moyie River	116%	126%
Priest River	227%	149%
Pend Oreille River	155%	162%
Rathdrum Creek	526%	153%
Hayden Lake	Not available	
Coeur d'Alene River	198%	145%
St. Joe River	169%	165%
Spokane River	197%	152%
Palouse River	****%	195%
North Fork Clearwater	174%	169%
Lochsa River	159%	182%
Selway River	161%	166%
Clearwater Basin Total	169%	168%
Salmon River ab Salmon	123%	160%
Lemhi River	131%	152%
Middle Fork Salmon River	111%	146%
South Fork Salmon River	119%	137%
Little Salmon River	119%	120%
Salmon Basin Total	123%	145%
Mann Creek	232%	125%
Weiser River	135%	115%
North Fork Payette	124%	127%
South Fork Payette	126%	136%
Payette Basin Total	123%	130%
Middle & North Fork Boise	145%	150%
South Fork Boise River	132%	157%
Mores Creek	153%	144%
Boise Basin Total	143%	149%
Canyon Creek	Not available	
Big Wood ab Magic	133%	162%
Camas Creek	184%	145%
Big Wood Basin Total	136%	160%
Little Wood River	151%	180%
Fish Creek	Not available	
Big Lost River	136%	155%
Little Lost River	134%	138%
Camas-Beaver Creeks	132%	161%
Henrys Fork River	129%	154%
Teton River	120%	165%
Snake above Jackson Lake	115%	156%
Gros Ventre River	108%	148%
Hoback River	114%	167%
Greys River	117%	162%
Salt River	123%	155%
Snake above Palisades	116%	159%
Willow Creek	150%	207%
Blackfoot River	123%	149%
Portneuf River	129%	202%
Snake abv American Falls Resv	118%	161%
Raft River	152%	232%
Goose-Trapper Creeks	157%	187%
Salmon Falls Creek	129%	144%
Bruneau River	118%	134%
Owyhee Basin Total	116%	101%
Smiths & Thomas Forks	123%	149%
Bear River ab WY-ID line	104%	151%
Montpelier Creek	359%	107%
Mink Creek	144%	123%
Cub River	150%	252%
Bear River ab ID-UT line	118%	160%
Malad River	****%	****%
Green River ab Warren Bridge	109%	149%

PANHANDLE REGION
MAY 1, 1997







WATER SUPPLY OUTLOOK

Cool weather in April started melting the snowpack at low and mid-elevations while higher elevations continued increasing in snow. April precipitation was 134% of average. Precipitation for the water year is 140% of average, even greater than last year. Snowpacks are around 45-65% above average, the highest since the early 1970s. Even the lower elevation basins of Palouse River and Rathdrum Creek are still well above the normal May 1 amounts. Snow water content in this region ranges from 8 inches of snow water at Sherwin SNOTEL site, located at 3,200 feet in the St. Maries River basin, to 92 inches at Bear Mountain, located at 5,400 feet east of Pend Oreille Lake along the Idaho/Montana border. With this amount of snow on the ground, the concern for flooding remains high. Reservoir storage is above normal for the natural lakes and reservoirs in this region with Coeur d'Alene Lake at twice its summer storage level. Streamflow forecasts call for record high May-July volumes for the Coeur d'Alene River, (191% of average) and St. Joe River, (181%). With snowpacks well above average, rivers will be high for an extended period of time this spring and summer. Residents in low lying areas should monitor streams closely when warm weather arrives or if rain occurs during the snow melt period.

PANHANDLE REGION
Streamflow Forecasts - May 1, 1997

Forecast Point	Forecast Period	<<== Drier == Future Conditions == Wetter ==>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
KOOTENAI at Leonia (1,2)	MAY-JUL	6356	7150	7510	118	7870	8664	6365
	MAY-SEP	7463	8389	8810	118	9231	10157	7465
CLARK FK at Whitehorse Rpds (1,2)	MAY-JUL	12788	14034	14600	146	15166	16412	10020
	MAY-SEP	14277	15668	16300	146	16932	18323	11200
PEND OREILLE Lake Inflow (1,2)	MAY-JUL	14645	15989	16600	150	17211	18555	11070
	MAY-SEP	16230	17722	18400	150	19078	20570	12290
PRIEST nr Priest River (1,2)	MAY-JUL	690	800	850	136	900	1010	627
	MAY-SEP	765	875	925	136	975	1085	680
COEUR D'ALENE at Enaville	MAY-JUL	784	853	900	191	947	1016	472
	MAY-SEP	851	922	970	190	1018	1089	512
ST.JOE at Calder	MAY-JUL	1464	1545	1600	182	1655	1736	881
	MAY-SEP	1579	1663	1720	181	1777	1861	949
SPOKANE near Post Falls (2)	MAY-JUL	2915	3132	3280	188	3428	3645	1749
	MAY-SEP	3069	3290	3440	186	3590	3811	1846
SPOKANE at Long Lake	MAY-JUL	3328	3555	3710	188	3865	4092	1975
	MAY-SEP	3719	3952	4110	187	4268	4501	2198

PANHANDLE REGION
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HUNGRY HORSE	3451.0	1341.0	1803.0	2043.0
FLATHEAD LAKE	1791.0	1082.0	1224.0	937.2
NOXON RAPIDS	335.0	326.8	324.3	208.7
PEND OREILLE	1561.3	1098.1	1079.5	920.7
COEUR D'ALENE	238.5	546.5	399.5	246.7
PRIEST LAKE	119.3	110.0	126.0	96.2

PANHANDLE REGION
Watershed Snowpack Analysis - May 1, 1997

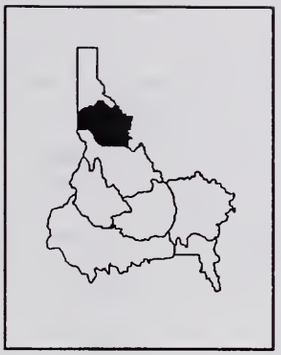
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Kootenai ab Bonners Ferry	31	141	148
Moyie River	3	116	126
Priest River	5	227	149
Pend Oreille River	91	157	164
Rathdrum Creek	1	526	153
Hayden Lake	0	0	0
Coeur d'Alene River	7	231	155
St. Joe River	2	169	165
Spokane River	10	217	158
Palouse River	1	0	195

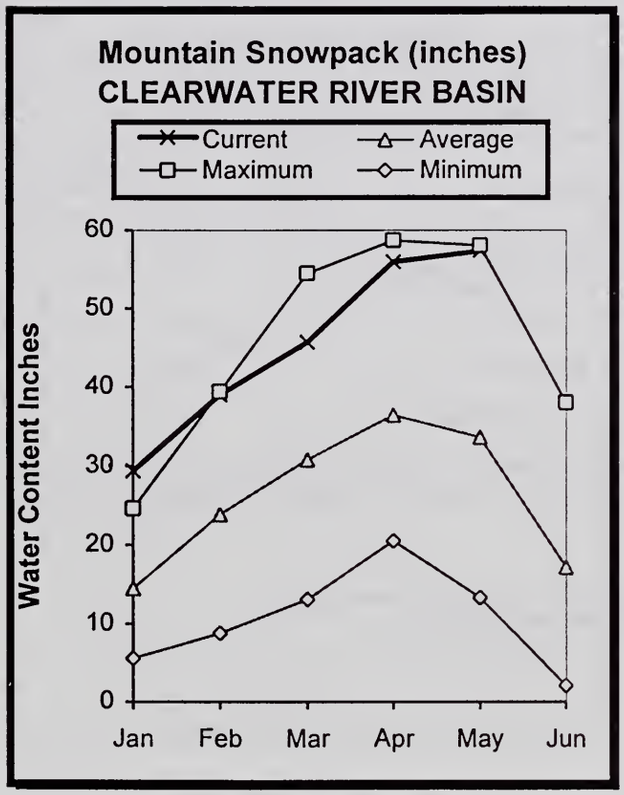
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

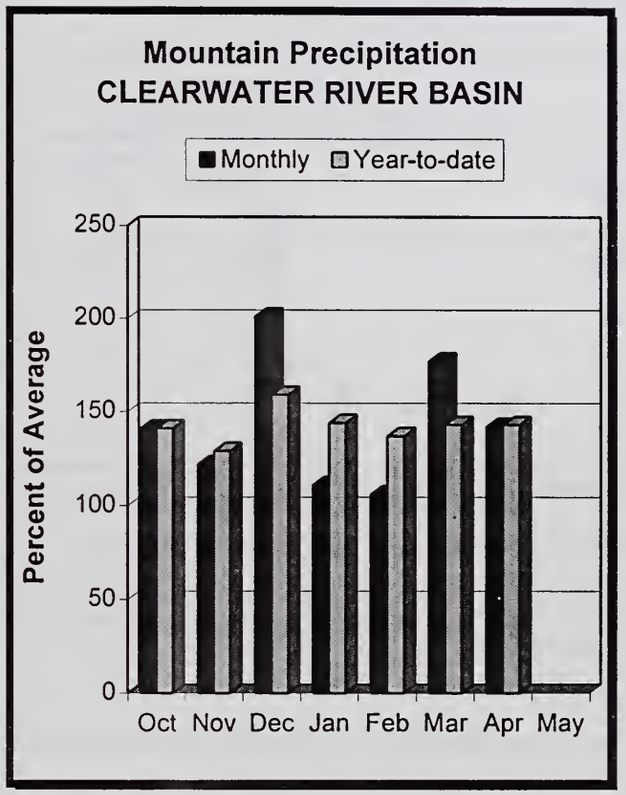
The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

CLEARWATER RIVER BASIN
MAY 1, 1997







WATER SUPPLY OUTLOOK

The snowpack in the Clearwater basin is the second highest May 1 level since records started in 1961. Higher elevation stations continued increasing in snow water during April while melting occurred in low and mid-elevation areas. However, cool weather in April kept melt rates below normal and increased the Clearwater basin snowpack to 166% of average. Many stations are at or have exceeded their record May 1 snow water content levels. Lost Lake SNOTEL site, located at 6,110 feet near the North Fork Clearwater and St. Joe basin divide, has 103 inches of snow water, just below the maximum of 107 inches measured on May 1, 1974. Precipitation in April was 142% of average and is 143% for the water year, about the same as this time last year. Dworshak Reservoir was drafted in preparation for the high runoff and is currently less than half full. Inflow to Dworshak Reservoir for the May-July period is forecast at 3.5 million acre-feet, a near record volume. The Clearwater River at Spalding is forecast at 152% of average. With the snowpack at near record high levels, stream levels will be high for an extended period this spring and summer. How high the streams rise and when they peak depends on spring air temperatures and precipitation. Residents in low lying areas should monitor streams closely when warm weather arrives or if rain occurs during the snow melt period.

CLEARWATER RIVER BASIN
Streamflow Forecasts - May 1, 1997

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
DWORSHAK RESV INFLOW (2)	MAY-JUL	3161	3363	3500	173	3637	3839	2029
	MAY-SEP	3453	3660	3800	173	3940	4147	2202
CLEARWATER at Orofino (1)	MAY-JUL	4920	5566	5860	153	6154	6800	3831
	MAY-SEP	5265	5956	6270	153	6584	7275	4089
CLEARWATER at Spalding (1,2)	MAY-JUL	7782	8661	9060	152	9459	10338	5972
	MAY-SEP	8357	9301	9730	152	10159	11103	6405

CLEARWATER RIVER BASIN
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
DWORSHAK	3459.0	1545.8	2623.5	2276.0

CLEARWATER RIVER BASIN
Watershed Snowpack Analysis - May 1, 1997

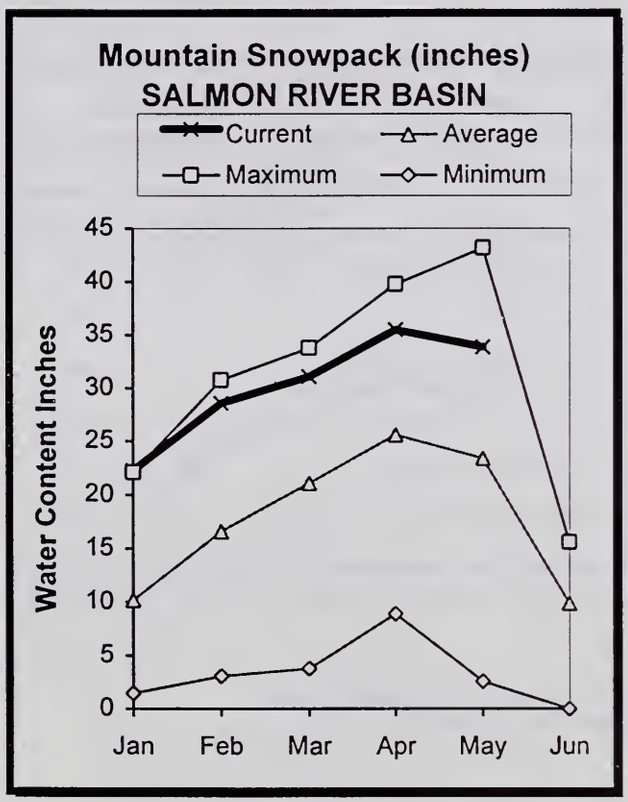
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
North Fork Clearwater	10	175	170
Lochsa River	4	155	166
Selway River	5	157	162
Clearwater Basin Total	17	168	167

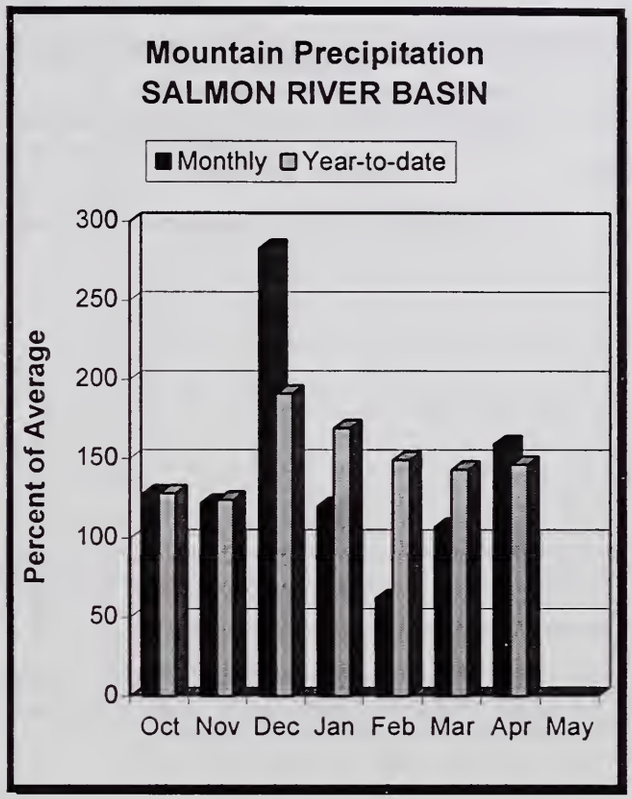
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

SALMON RIVER BASIN
MAY 1, 1997





WATER SUPPLY OUTLOOK

April precipitation was 159% of average and has been above average every month this water year with the exception of February. Cool wet weather in April started melting the snow gradually but at below normal melt rates. As a result, snowpack percentages increased from last month and now range from 120% of average in the Little Salmon basin to 160% in the Salmon River above Salmon. Overall, the Salmon basin snowpack is 145% of average, topped only by years 1971, 1974 and 1982. Streamflow forecasts for the residual May-September period call for 166% of average for the Salmon River at Salmon and 148% for the Salmon River at White Bird. The abundant snow levels, which are the fourth highest since records started in 1961, will provide an extended boating season after the snow melt streamflow peaks occur. River runners should use caution when evaluating their high water boating capabilities. Extreme whitewater conditions are a real possibility during the peak flow period this year. Spring precipitation and air temperatures during the snow melt season will determine the magnitude and timing of streamflow peaks on the Salmon River and its tributaries.

SALMON RIVER BASIN
Streamflow Forecasts - May 1, 1997

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SALMON at Salmon (1)	MAY-JUL	1012	1210	1300	168	1390	1588	772
	MAY-SEP	1186	1422	1530	166	1638	1874	922
SALMON at White Bird (1)	MAY-JUL	6693	7468	7820	148	8172	8947	5284
	MAY-SEP	7512	8381	8775	148	9169	10038	5930

SALMON RIVER BASIN
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

SALMON RIVER BASIN
Watershed Snowpack Analysis - May 1, 1997

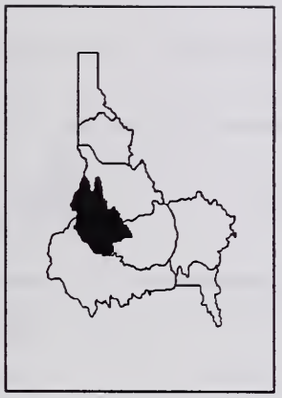
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Salmon River ab Salmon	8	123	160
Lemhi River	5	129	149
Middle Fork Salmon River	3	111	146
South Fork Salmon River	3	119	137
Little Salmon River	4	119	120
Salmon Basin Total	24	123	145

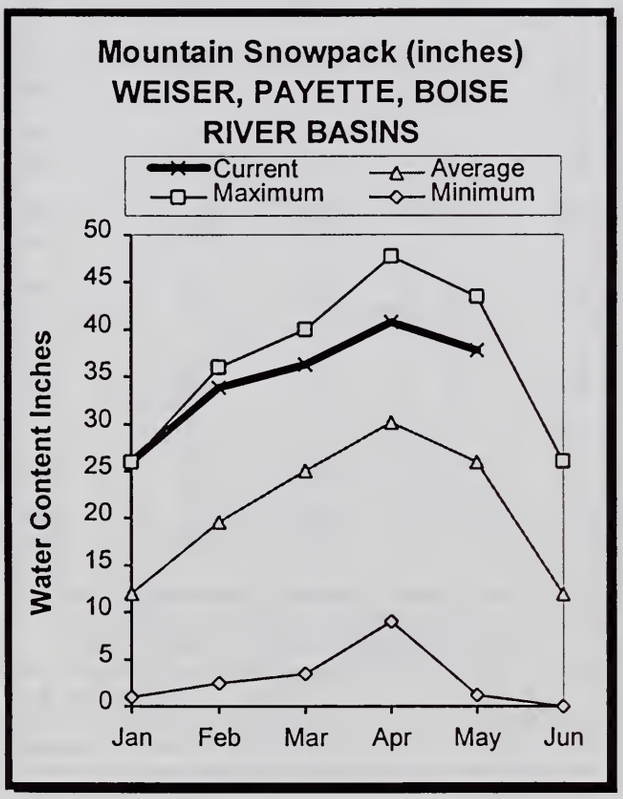
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

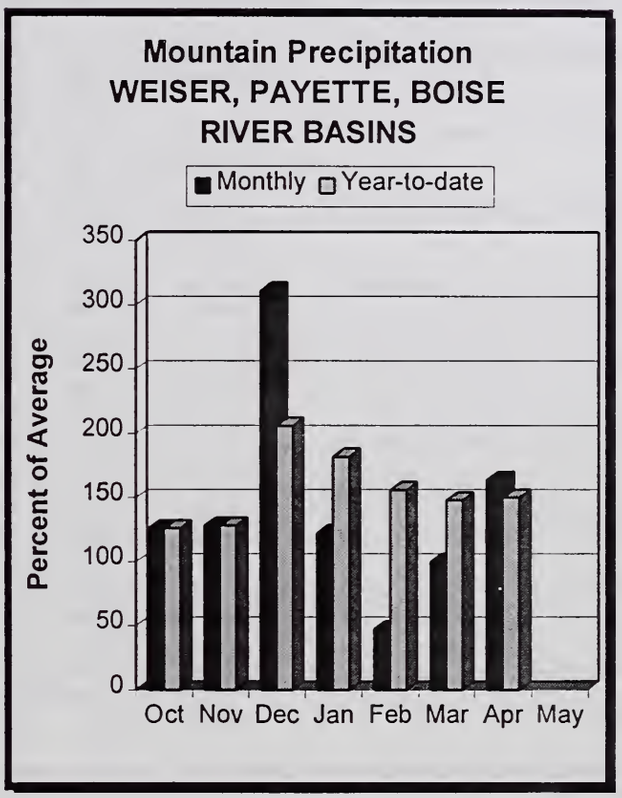
The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

WEISER, PAYETTE, BOISE RIVER BASINS
MAY 1, 1997







WATER SUPPLY OUTLOOK

April precipitation was 164% of average and is 150% for the water year, the highest in the state. Cool wet weather in April melted the snow at normal melt rates in the Weiser and Payette basins. As a result, snowpack percentages are about the same as last month, 130% of average in the Payette and 115% in the Weiser basin. However, in the Boise basin, sites above approximately 7,800 feet in elevation continued accumulating in snow water. The higher elevation snowpack is the second highest since 1952, only exceeded in 1974. Overall the snowpack in the Boise basin is 149% of average. Reservoirs in the Boise system were drafted in preparation for the high runoff. Current reservoir storage in the Boise system is 417,000 acre-feet (40% of capacity) and is the lowest April 30 storage since Lucky Peak was built in 1955. The Payette system is about half full. The May-July streamflow forecasts for the Boise and Payette rivers call for record high streamflow volumes. The Boise River at Boise is forecast at 195% of average. The Payette River near Horse Bend is forecast at 185% of average, while the Weiser River is forecast at 124% of average. Residents in low lying areas should be prepared for high flows and monitor stream levels closely when warm weather arrives or if rain occurs during the snow melt period.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts - May 1, 1997

Forecast Point	Forecast Period	<<=== Drier === Future Conditions === Wetter ===>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
WEISER nr Weiser (1)	MAY-JUL	171	267	310	124	353	449	250
	MAY-SEP	190	300	350	125	395	504	280
SF PAYETTE at Lowman	MAY-JUL	619	644	661	176	678	703	375
	MAY-SEP	700	727	745	173	763	790	431
DEADWOOD RESERVOIR Inflow (1,2)	MAY-JUL	193	208	215	179	222	237	120
	MAY-SEP	204	220	227	179	234	250	127
NF PAYETTE nr Cascade (1,2)	MAY-JUL	624	690	720	177	750	816	407
	MAY-SEP	672	743	775	175	807	878	442
NF PAYETTE nr Banks (2)	MAY-JUL	806	868	910	178	952	1014	512
	MAY-SEP	867	934	980	177	1026	1093	554
PAYETTE nr Horseshoe Bend (1,2)	MAY-JUL	2167	2334	2410	185	2486	2653	1304
	MAY-SEP	2385	2567	2650	184	2733	2915	1442
BOISE near Twin Springs (1)	MAY-JUL	861	915	940	185	965	1019	509
	MAY-SEP	960	1018	1045	185	1072	1130	564
SF BOISE at Anderson Rnch Dm (1,2)	MAY-JUL	706	778	810	188	842	914	432
	MAY-SEP	763	841	876	186	911	989	470
MORES CK nr Arrowrock Dam	MAY-JUL	134	141	146	190	151	158	77
	MAY-SEP	144	151	156	190	161	168	82
BOISE nr Boise (1,2)	MAY-JUL	1921	2058	2120	195	2182	2319	1090
	MAY-SEP	2120	2268	2335	194	2402	2550	1204

WEISER, PAYETTE, BOISE RIVER BASINS
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MANN CREEK	11.1	10.8	11.1	10.4
CASCADE	703.2	378.5	535.0	411.7
DEADWOOD	161.9	70.4	128.0	101.1
ANDERSON RANCH	464.2	210.8	312.5	327.2
ARROWROCK	286.6	104.1	198.9	214.9
LUCKY PEAK	293.2	102.4	152.7	182.9
LAKE LOWELL (DEER FLAT)	177.1	124.9	135.2	169.8

WEISER, PAYETTE, BOISE RIVER BASINS
Watershed Snowpack Analysis - May 1, 1997

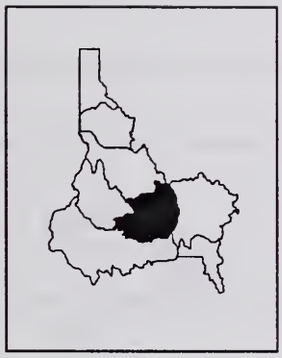
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Mann Creek	1	226	122
Weiser River	3	134	114
North Fork Payette	7	124	127
South Fork Payette	4	126	136
Payette Basin Total	12	123	130
Middle & North Fork Boise	6	145	150
South Fork Boise River	6	132	157
Mores Creek	4	153	144
Boise Basin Total	12	143	149
Canyon Creek	0	0	0

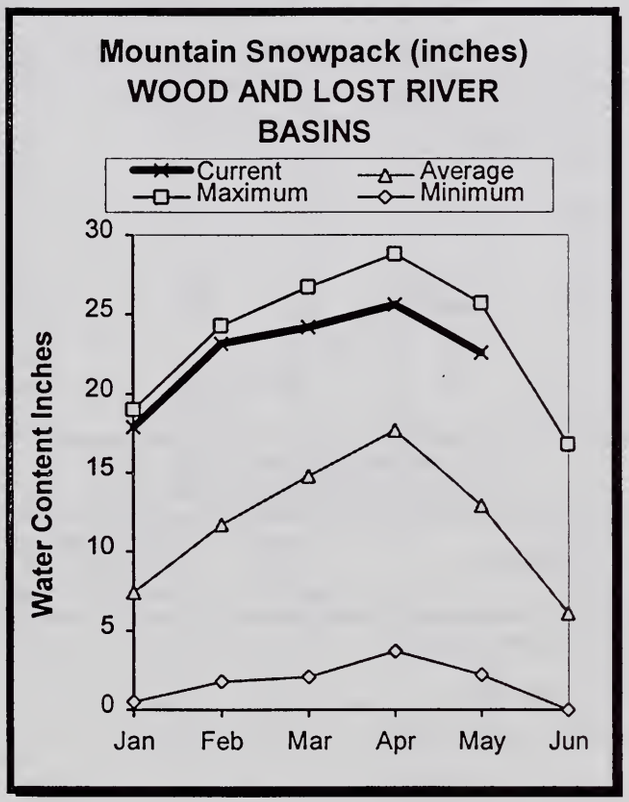
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

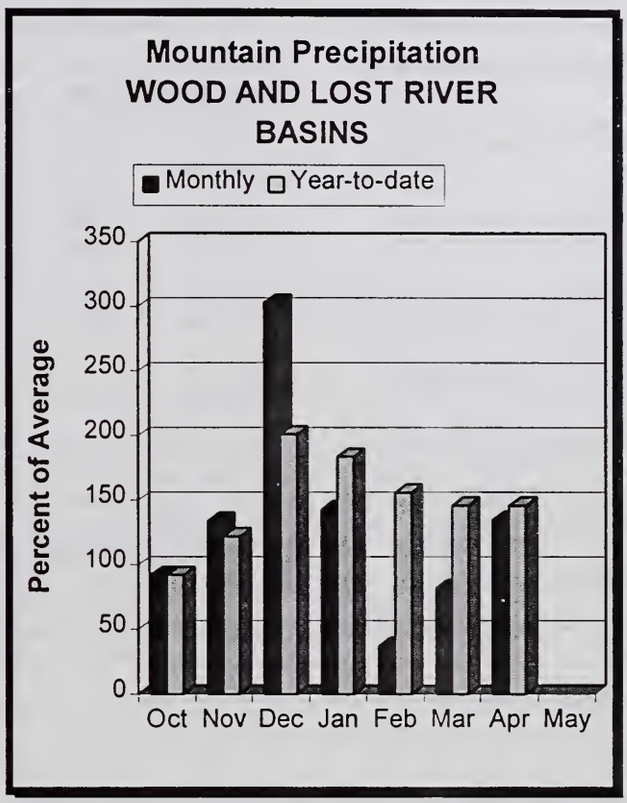
The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

WOOD and LOST RIVER BASINS
MAY 1, 1997







WATER SUPPLY OUTLOOK

After two months of below normal precipitation, the pattern changed and April brought precipitation that was 35% above normal. Precipitation since the water year started in October is 146% of average. Snow measuring stations above 8,000 feet in elevation continued accumulating snow during April while mid-elevation areas started melting. The Big Wood/Camas basin snowpack is 160% of average, the highest since 1982, while the snowpack in the Big Lost basin is 146% of average. Overall, the combined snowpack in the Wood and Lost basin is 153% of average, the fifth highest since 1961. Magic Reservoir is 94% full while Little Wood and Mackay are about half full. With near record snow levels, the May-July streamflow forecasts remain high and call for the highest projected flows in the Big Wood basin. Magic Reservoir inflow is forecast at 400,000 acre-feet, 199% of average. The Little Wood River is forecast at 175% of average while the Big Lost River below Mackay is forecast at 144% of average. There will be plenty of water to fill these reservoirs. Spring precipitation and air temperatures during the snow melt season will determine when and how high the streams peak this season. Residents in low lying areas should be prepared for high flows and monitor stream levels closely when warm weather arrives or if rain occurs during the snow melt period.

WOOD AND LOST RIVER BASINS
Streamflow Forecasts - May 1, 1997

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
BIG WOOD at Hailey (1)	MAY-JUL	318	357	375	167	394	437	224
	MAY-SEP	368	410	430	167	450	497	257
BIG WOOD near Bellevue	MAY-JUL	247	274	294	189	314	345	156
	MAY-SEP	267	296	317	187	338	371	170
CAMAS CREEK near Blaine	MAY-JUL	58	67	73	175	80	90	42
	MAY-SEP	59	68	74	174	81	91	43
BIG WOOD below Magic Dam (2)	MAY-JUL	356	382	400	199	418	444	201
	MAY-SEP	382	411	430	199	449	478	216
LITTLE WOOD near Carey (2)	MAY-JUL	96	107	114	175	121	132	65
	MAY-SEP	108	119	127	174	135	146	73
BIG LOST at Howell Ranch	MAY-JUL	216	230	240	142	250	264	169
	MAY-SEP	249	266	277	142	288	305	195
BIG LOST below Mackay Reservoir (2)	MAY-JUL	176	190	200	144	210	224	139
	MAY-SEP	219	235	245	143	255	271	171
LITTLE LOST blw Wet Creek	MAY-JUL	34	38	41	150	43	47	27
	MAY-SEP	43	48	52	147	55	60	35

WOOD AND LOST RIVER BASINS
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MAGIC	191.5	180.7	168.7	167.7
LITTLE WOOD	30.0	14.2	26.9	24.6
MACKAY	44.4	22.2	36.0	34.2

WOOD AND LOST RIVER BASINS
Watershed Snowpack Analysis - May 1, 1997

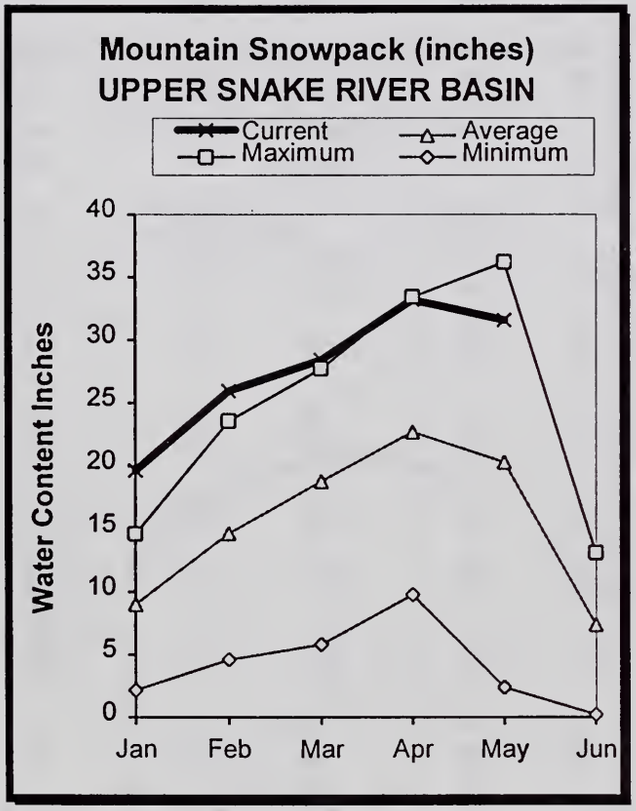
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Big Wood ab Magic	7	134	162
Camas Creek	2	184	145
Big Wood Basin Total	9	137	160
Little Wood River	3	151	180
Fish Creek	0	0	0
Big Lost River	6	135	146
Little Lost River	3	134	138

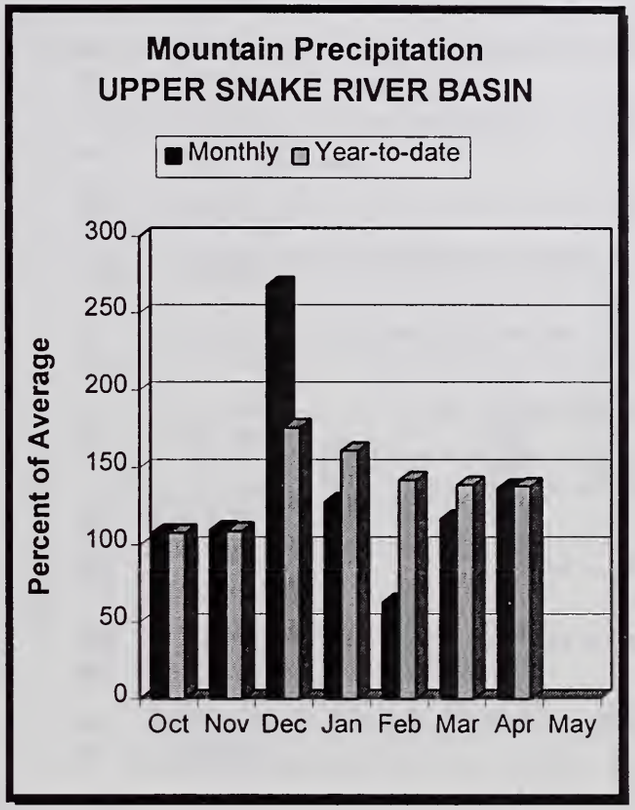
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

UPPER SNAKE RIVER BASIN
MAY 1, 1997





WATER SUPPLY OUTLOOK

April precipitation was 137% of average and is 138% for the water year. Snow water content continued accumulating at sites above 7,500 feet in elevation. Mid-elevation sites started melting during April but at below normal melt rates. As a result of the delayed melt, snowpack percentages increased from last month. The Henrys Fork snowpack is currently 154% of average, the third highest since records started in 1973. The Teton basin snowpack is 157% of average, only exceeded by year 1982. The snowpack in the Snake basin above Palisades Reservoir is 159% of average. Snowpacks in the lower elevation drainages of Portneuf and Willow creek basins are twice normal as a result of the delayed melt. Overall, the snowpack in the Snake River basin above American Falls is 162% of average, only exceeded by 1971. Reservoirs have been drafted in preparation of the high runoff. The combined storage for the eight major reservoirs in this region is 53% of capacity. Streamflow forecasts remain high and call for 130-160% of average for most streams in the area. Residents in low lying areas should be prepared for high flows when the snow starts melting. With near record snowpacks, the potential for flooding is high this year and river levels will be above normal for the rest of the runoff season.

UPPER SNAKE RIVER BASIN
Streamflow Forecasts - May 1, 1997

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter ====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
HENRYS FORK nr Ashton (2)	MAY-JUL	533	576	605	140	634	677	432
	MAY-SEP	750	807	845	137	883	940	618
HENRYS FORK nr Rexburg (2)	MAY-JUL	1438	1513	1565	154	1617	1692	1016
	MAY-SEP	1901	1996	2060	154	2124	2219	1339
FALLS RIVER nr Squirrel (1,2)	MAY-JUL	376	405	419	130	433	462	322
	MAY-SEP	453	490	506	130	522	559	390
TETON abv S Leigh Ck nr Driggs	MAY-JUL	181	197	208	160	219	235	130
	MAY-SEP	247	267	280	158	293	313	177
TETON nr St. Anthony (2)	MAY-JUL	459	497	523	159	549	587	329
	MAY-SEP	555	600	630	154	660	705	408
SNAKE nr Moran (1,2)	MAY-SEP	1088	1172	1210	149	1248	1332	814
SNAKE R abv Palisades Rsvr nr Alpine	MAY-JUL	3071	3241	3356	162	3471	3641	2070
	MAY-SEP	3561	3750	3879	160	4008	4197	2431
GREYS R abv Palisades Reservoir	MAY-JUL	347	375	395	133	415	443	296
	MAY-SEP	405	438	460	133	482	515	345
SALT abv Reservoir nr Etna	MAY-JUL	282	328	360	138	392	438	261
	MAY-SEP	378	430	465	136	500	552	341
PALISADES RESV INFLOW (1,2)	MAY-JUL	3995	4307	4448	154	4589	4901	2889
	MAY-SEP	4703	5052	5210	152	5368	5717	3426
SNAKE nr Heise (2)	MAY-JUL	4338	4569	4725	154	4881	5112	3073
	MAY-SEP	5093	5359	5540	151	5721	5987	3670
SNAKE nr Blackfoot (1,2)	MAY-JUL	5236	5899	6200	156	6501	7164	3981
	MAY-SEP	6889	7605	7930	158	8255	8971	5019
PORTNEUF at Topaz	MAY-JUL	59	66	71	129	76	83	55
	MAY-SEP	89	94	98	129	102	107	76
AMERICAN FALLS RESV INFLOW (1,2)	MAY-JUL	3676	4346	4650	189	4954	5624	2463
	MAY-SEP	3821	4680	5070	188	5460	6319	2700

UPPER SNAKE RIVER BASIN
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HENRYS LAKE	90.4	77.0	87.1	81.8
ISLAND PARK	135.2	114.4	124.0	125.7
GRASSY LAKE	15.2	13.7	13.7	11.7
JACKSON LAKE	847.0	432.2	530.7	456.5
PALISADES	1400.0	259.9	406.4	950.0
RIRIE	80.5	73.6	73.9	59.4
BLACKFOOT	348.7	250.0	273.7	274.6
AMERICAN FALLS	1672.6	1203.6	1393.3	1542.9

UPPER SNAKE RIVER BASIN
Watershed Snowpack Analysis - May 1, 1997

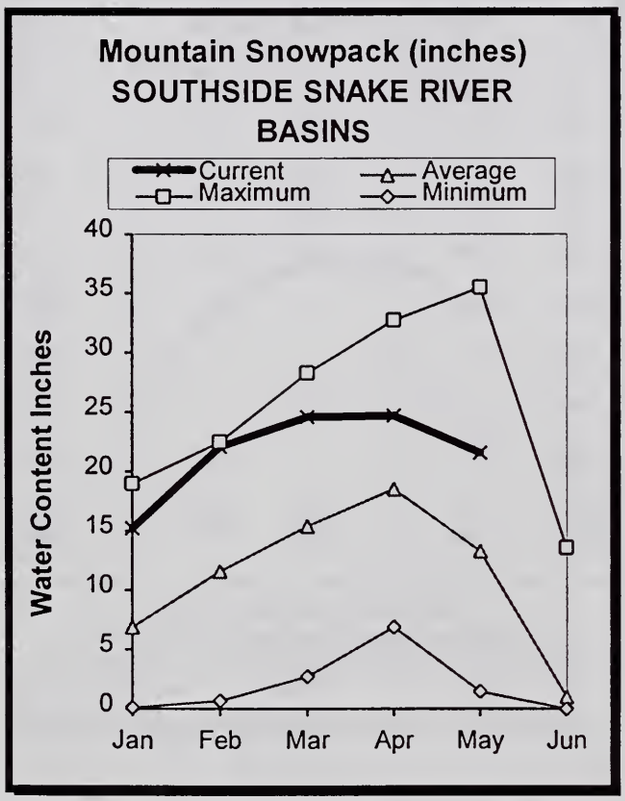
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Camas-Beaver Creeks	2	132	161
Henrys Fork River	10	128	154
Teton River	8	124	157
Snake above Jackson Lake	8	115	155
Gros Ventre River	3	108	148
Hoback River	6	114	167
Greys River	4	117	162
Salt River	5	123	155
Snake above Palisades	26	116	159
Willow Creek	4	149	198
Blackfoot River	2	123	149
Portneuf River	2	129	202
Snake abv American Falls	33	119	162

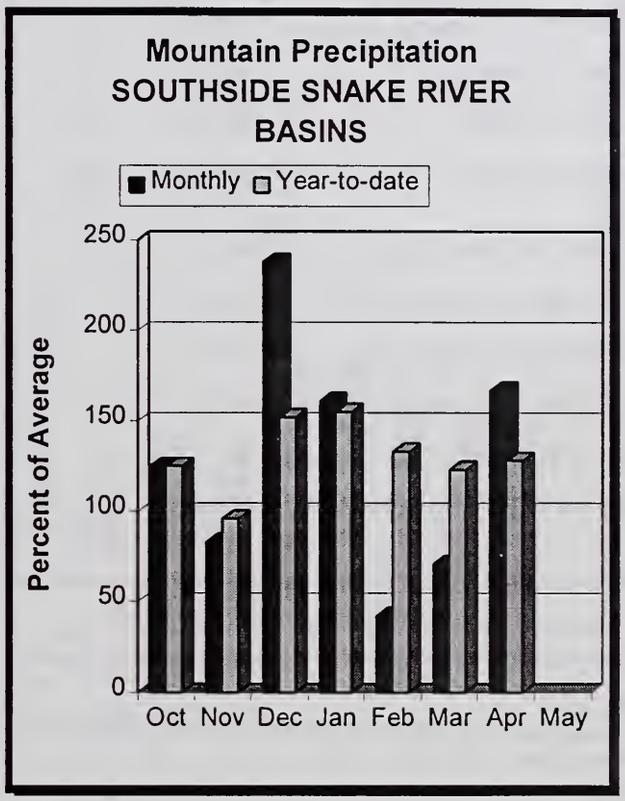
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

SOUTHSIDE SNAKE RIVER BASINS
MAY 1, 1997





WATER SUPPLY OUTLOOK

Cool wet weather in April brought additional moisture in these southern Idaho basins and kept the snow melting at below normal rates. As a result of the delayed melt, snowpack percentages increased from last month and are currently 189% of average in Goose Creek, around 140% in Salmon Falls and Bruneau basins, and near normal in the Owyhee basin. Overall, these basins south of the Snake River are the seventh highest since 1961. Oakley and Salmon Falls reservoirs are around 58% full while Owyhee and Wildhorse reservoirs are already full. Streamflow forecasts call for 130% of average for Oakley Reservoir inflow and 152% for Salmon Falls Creek. The snow melt streamflow peak has already occurred in the Owyhee and Raft rivers. The above average snowpack will keep the residual flows high for an extended period this summer. Reservoir operators and residents in low lying areas should be prepared for high streamflows when warm weather arrives and starts melting the high elevation snowpack. Any additional precipitation during the snow melt season will only add to the already high forecast volumes.

SOUTHSIDE SNAKE RIVER BASINS
Streamflow Forecasts - May 1, 1997

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
OAKLEY RESV INFLOW	MAY-JUL	19.8	23	26	130	29	33	20
	MAY-SEP	23	27	30	130	33	38	23
SALMON FALLS CREEK nr San Jacinto	MAY-JUL	65	78	87	152	96	111	57
	MAY-SEP	71	84	93	151	103	118	62
BRUNEAU near Hot Springs	MAY-JUL	195	232	260	161	289	335	162
	MAY-SEP	207	246	275	159	305	353	173
OWYHEE near Gold Creek (2)	MAY-JUL	5.7	10.5	14.5	119	19.2	27	12.2
OWYHEE nr Owyhee (2)	MAY-JUL	41	56	67	115	77	92	58
OWYHEE near Rome	MAY-JUL	203	238	263	132	290	331	200
OWYHEE RESV INFLOW	MAY-JUL	209	242	265	126	290	328	210
	MAY-SEP	239	273	298	125	324	364	238
SUCCOR CK nr Jordan Valley	MAY-JUL	2.01	4.62	6.40	126	8.18	10.79	5.10
SNAKE RIVER at King Hill (2)	MAY-JUL			2650	130			2038
SNAKE RIVER near Murphy (2)	MAY-JUL			2670	129			2077
SNAKE RIVER at Weiser (2)	MAY-JUL			6580	174			3793
SNAKE RIVER at Hells Canyon Dam	MAY-JUL			7480	175			4276
SNAKE blw Lower Granite Dam (1,2)	MAY-JUL	24210	26472	27500	162	28528	30790	16940
	MAY-SEP	28395	31012	32200	164	33388	36005	19650

SOUTHSIDE SNAKE RIVER BASINS
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
OAKLEY	77.4	45.3	42.8	39.2
SALMON FALLS	182.6	101.2	100.6	81.4
WILDHORSE RESERVOIR	71.5	75.2	69.8	47.2
OWYHEE	715.0	715.9	713.0	619.0
BROWNLEE	1419.3	488.8	756.9	959.9

SOUTHSIDE SNAKE RIVER BASINS
Watershed Snowpack Analysis - May 1, 1997

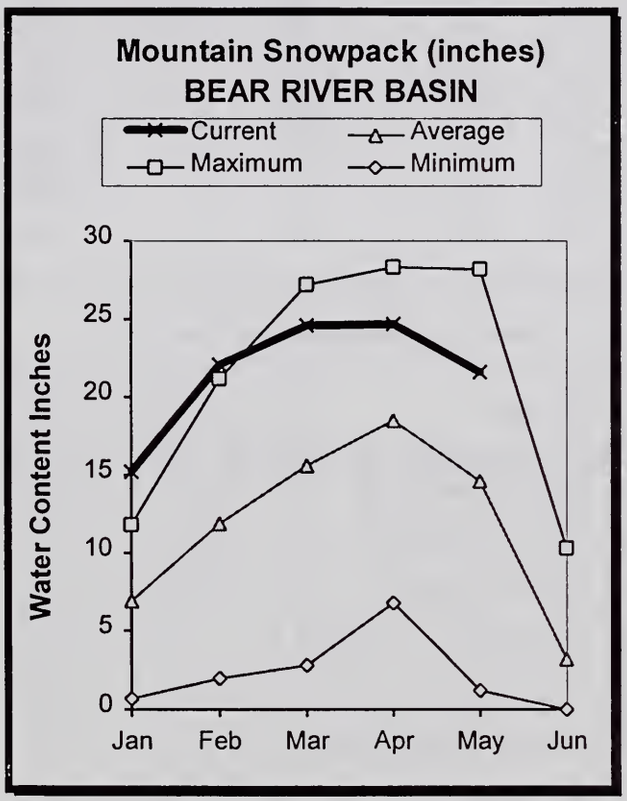
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Raft River	1	152	232
Goose-Trapper Creeks	3	158	189
Salmon Falls Creek	5	129	144
Bruneau River	5	118	134
Owyhee Basin Total	7	116	101

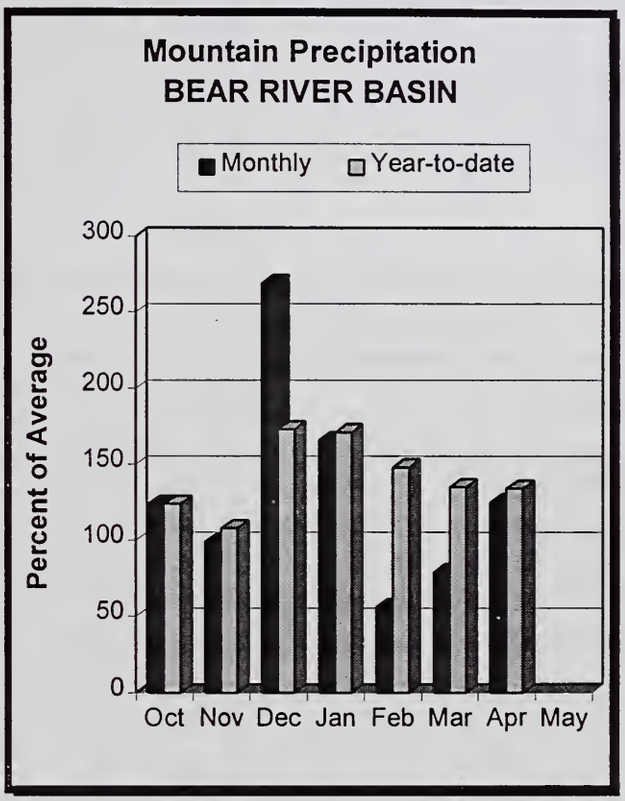
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

BEAR RIVER BASIN
MAY 1, 1997





WATER SUPPLY OUTLOOK

April precipitation was 125% of average, bringing the water year total to 134%. Mid-elevation sites are starting to melt but cool temperatures during April kept melt rates below normal. As a result, snowpack percentages increased from last month and are now around 50% above average in southeast Idaho. Overall, the Bear River basin snowpack is 160% of average, the highest since 1986. Bear Lake is three fourths full while Montpelier Creek Reservoir is two thirds full. Streamflow forecasts for the May-July period remain high and call for 143% of average for Montpelier Creek and 147% for the Bear River at Stewart Dam. Operators of the numerous small reservoirs in the area should monitor storage, inflow and outflow rates to help mitigate flooding and maintain adequate space for peak inflows. With the abundant snowpack, residents in low lying areas should be aware of the possibility of high flows when the snow starts melting. Any additional spring precipitation will only add to the already high forecast volumes. Streamflow volumes will be above normal for the remainder of the runoff season.

BEAR RIVER BASIN
Streamflow Forecasts - May 1, 1997

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
BEAR R nr Randolph, UT	MAY-JUL	80	107	125	142	143	170	88
	MAY-SEP	86	117	138	142	159	190	97
SMITHS FORK nr Border, WY	MAY-JUL	118	128	135	147	142	152	92
	MAY-SEP	140	152	160	147	168	180	109
THOMAS FK nr WY-ID State Line	MAY-JUL	24	32	38	141	46	60	27
	MAY-SEP	27	35	42	140	50	64	30
BEAR R blw Stewart Dam nr Montpelier	MAY-JUL	257	301	330	147	359	403	225
	MAY-SEP	305	356	390	148	424	475	264
MONTPELIER CK nr Montpelier (2)	MAY-JUL	8.85	11.12	13.00	143	15.19	19.10	9.10
	MAY-SEP	10.6	13.1	15.0	142	17.2	21	10.6
CUB R nr Preston	MAY-JUL	56	61	64	149	67	72	43

BEAR RIVER BASIN
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
WOODRUFF NARROWS	57.3	57.3	57.3	---
WOODRUFF CREEK	4.0	4.0	4.0	---
BEAR LAKE	1421.0	1023.0	722.0	1059.0
MONTPELIER CREEK	4.0	2.7	3.4	2.2

BEAR RIVER BASIN
Watershed Snowpack Analysis - May 1, 1997

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Smiths & Thomas Forks	3	123	149
Bear River ab WY-ID line	10	104	151
Montpelier Creek	2	129	154
Mink Creek	1	144	123
Cub River	1	150	252
Bear River ab ID-UT line	17	118	160
Malad River	1	0	0

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

Streamflow forecasts are projections of runoff volumes that would have occurred naturally without influences from upstream reservoirs or diversions. These values are referred to as natural or adjusted flows. To make these adjustments, changes in reservoir storage, diversions, and interbasin transfers are added or subtracted from the observed (actual) streamflow volumes. The following list documents the adjustments made to each forecast point in this report.

Panhandle River Basins

KOOTENAI R AT LEONIA, ID
+ LAKE KOOCANUSA (STORAGE CHANGE)
CLARK FORK R AT WHITEHORSE RAPIDS, ID
+ HUNGRY HORSE (STORAGE CHANGE)
+ FLATHEAD LAKE (STORAGE CHANGE)
+ NOXON RAPIDS RESV (STORAGE CHANGE)
PEND OREILLE LAKE INFLOW, ID
+ PEND OREILLE R AT NEWPORT, WA
+ HUNGRY HORSE (STORAGE CHANGE)
+ FLATHEAD LAKE (STORAGE CHANGE)
+ NOXON RAPIDS (STORAGE CHANGE
+ PEND OREILLE LAKE (STORAGE CHANGE)
PRIEST R NR PRIEST R, ID
+ PRIEST LAKE (STORAGE CHANGE)
COEUR D'ALENE R AT ENAVILLE, ID - No Corrections
ST. JOE R AT CALDER, ID - No Corrections
SPOKANE R NR POST FALLS, ID
+ COEUR D'ALENE LAKE (STORAGE CHANGE)
SPOKANE R AT LONG LAKE, ID
+ COEUR D'ALENE LAKE (STORAGE CHANGE)

Clearwater River Basin

CLEARWATER R AT OROFINO, ID - No Corrections
DWORSHAK RESERVOIR INFLOW, ID
+ CLEARWATER R NR PECK, ID
+ DWORSHAK RESV (STORAGE CHANGE)
- CLEARWATER R AT OROFINO, ID
CLEARWATER R AT SPALDING, ID
+ DWORSHAK RESV (STORAGE CHANGE)

Salmon River Basin

SALMON R AT SALMON, ID - No Corrections
SALMON R AT WHITE BIRD, ID - No Corrections

Weiser, Payette, Boise River Basins

WEISER R NR WEISER, ID - No Corrections
SF PAYETTE R AT LOWMAN, ID - No Corrections
DEADWOOD RESERVOIR INFLOW, ID
+ DEADWOOD R BLW DEADWOOD RESV NR LOWMAN
+ DEADWOOD RESV (STORAGE CHANGE)
NF PAYETTE R AT CASCADE, ID
+ CASCADE RESV (STORAGE CHANGE)
NF PAYETTE R NR BANKS, ID
+ CASCADE RESV (STORAGE CHANGE)
PAYETTE R NR HORSESHOE BEND, ID
+ DEADWOOD RESV (STORAGE CHANGE)
+ CASCADE RESV (STORAGE CHANGE)
BOISE R NR TWIN SPRINGS, ID - No Corrections
SF BOISE R AT ANDERSON RANCH DAM, ID
+ ANDERSON RANCH RESV (STORAGE CHANGE)
MORES CK NR ARROWROCK DAM, ID - No Corrections
BOISE R NR BOISE, ID
+ ANDERSON RANCH RESV (STORAGE CHANGE)
+ ARROWROCK RESV (STORAGE CHANGE)
+ LUCKY PEAK RESV (STORAGE CHANGE)

Wood and Lost River Basins

BIG WOOD R AT HAILEY, ID - No Corrections
BIG WOOD R NR BELLEVUE, ID - No Corrections
CAMAS CK NR BLAINE, ID - No Corrections
BIG WOOD R BLW MAGIC DAM NR RICHFIELD, ID
+ MAGIC RESV (STORAGE CHANGE)
LITTLE WOOD R NR CAREY, ID
+ LITTLE WOOD RESV (STORAGE CHANGE)
BIG LOST R AT HOWELL RANCH NR CHILLY, ID - No Corrections
BIG LOST R BLW MACKAY RESV NR MACKAY, ID
+ MACKAY RESV (STORAGE CHANGE)
LITTLE LOST R BLW WET CK NR HOWE, ID - No Corrections

Upper Snake River Basin

HENRYS FORK NR ASHTON, ID
+ HENRYS LAKE (STORAGE CHANGE)
+ ISLAND PARK RESV (STORAGE CHANGE)
HENRYS FORK NR REXBURG, ID
+ HENRYS LAKE (STORAGE CHANGE)
+ ISLAND PARK RESV (STORAGE CHANGE)
+ DIV FM HENRYS FK BTW ASHTON & ST. ANTHONY, ID
+ DIV FM HENRYS FK BTW ST. ANTHONY & REXBURG, ID
FALLS R NR SQUIRREL, ID (Discontinued)
+ GRASSY LAKE (STORAGE CHANGE)
TETON R ABV SO LEIGH CK NR DRIGGS, ID - No Corrections
TETON R NR ST. ANTHONY, ID
- CROSS CUT CANAL
+ SUM OF DIVERSIONS ABV GAGE
SNAKE R NR MORAN, WY
+ JACKSON LAKE (STORAGE CHANGE)
PACIFIC CK AT MORAN, WY - No Corrections
SNAKE R ABV PALISADES RESV NR ALPINE, WY
+ JACKSON LAKE (STORAGE CHANGE)
GREYS R ABV PALISADES RESV, WY - No Corrections
SALT R ABV RESV NR ETNA, WY - No Corrections
PALISADES RESERVOIR INFLOW, ID
+ SNAKE R NR IRWIN, ID
+ PALISADES RESV (STORAGE CHANGE)
+ JACKSON LAKE (STORAGE CHANGE)
SNAKE R NR HEISE, ID
+ PALISADES RESV (STORAGE CHANGE)
+ JACKSON LAKE (STORAGE CHANGE)
SNAKE R NR BLACKFOOT, ID
+ PALISADES RESV (STORAGE CHANGE)
+ JACKSON LAKE (STORAGE CHANGE)
+ DIV FM SNAKE R BTW HEISE AND SHELLY GAGES
+ DIV FM SNAKE R BTW SHELLY AND BLACKFT, ID
PORTNEUF R AT TOPAZ, ID - No Corrections
AMERICAN FALLS RESERVOIR INFLOW, ID
+ SNAKE R AT NEELEY, ID
+ AMERICAN FALLS (STORAGE CHANGE)
+ PALISADES RESV (STORAGE CHANGE)
+ JACKSON LAKE (STORAGE CHANGE)

Southside Snake River Basins

OAKLEY RESERVOIR INFLOW, ID
- + GOOSE CK ABV TRAPPER CK NR OAKLEY, ID
- + TRAPPER CK NR OAKLEY, ID

SALMON FALLS CK NR SAN JACINTO, NV - No Corrections
BRUNEAU R NR HOT SPRINGS, ID - No Corrections
OWYHEE R NR GOLD CK, NV
- + WILDHORSE RESV (STORAGE CHANGE)

OWYHEE R NR ROME, OR
- + WILDHORSE RESV (STORAGE CHANGE)
- + JORDAN VALLEY RESV (STORAGE CHANGE)

OWYHEE RESERVOIR INFLOW, OR
- + OWYHEE R BLW OWYHEE DAM, OR
- + OWYHEE RESV (STORAGE CHANGE)
- + DIV TO NORTH AND SOUTH CANALS

SUCCOR CK NR JORDAN VALLEY, OR - No Corrections
SNAKE R - KING HILL, ID - No Corrections
SNAKE R NR MURPHY, ID - No Corrections
SNAKE R AT WEISER, ID - No Corrections
SNAKE R AT HELLS CANYON DAM, ID
- + BROWNLEE RESV (STORAGE CHANGE)

Bear River Basin

BEAR R NR RANDOLPH, UT
- + SULPHUR CK RESV (STORAGE CHANGE)
- + CHAPMAN CANAL DIVERSION
- + WOODRUFF NARROWS RESV (STORAGE CHANGE)

SMITHS FORK NR BORDER, WY - No Corrections
THOMAS FORK NR WY-ID STATELINE - No Corrections
BEAR R BLW STEWART DAM, ID
- + SULPHUR CK RESV (STORAGE CHANGE)
- + CHAPMAN CANAL DIVERSION
- + WOODRUFF NARROWS RESV (STORAGE CHANGE)
- + TOTAL OF 12 CANALS
- + WESTFORK CANAL
- + DINGLE INLET CANAL
- + RAINBOW INLET CANAL

MONTPELIER CK NR MONTPELIER, ID
- + MONTPELIER CK RESV (STORAGE CHANGE)

CUB R NR PRESTON, ID - No Corrections

RESERVOIR CAPACITY DEFINITIONS - Different agencies use various definitions when reporting reservoir capacity and contents. Reservoir storage terms include dead, inactive, active, and surcharge storage. The table below lists these volumes for each reservoir in this report, and defines the storage volumes that NRCS uses when reporting capacity and current reservoir storage. In most cases, NRCS reports usable storage, which includes active and inactive storage.

BASIN/ RESERVOIR	DEAD STORAGE	INACTIVE STORAGE	ACTIVE STORAGE	SURCHARGE STORAGE	NRCS CAPACITY	NRCS FIGURES INCLUDE
PANHANDLE REGION						
HUNGRY HORSE	39.73	--	3451.00	--	3451.0	ACTIVE
FLATHEAD LAKE	Unknown	--	1791.00	--	1971.0	ACTIVE
NOXON RAPIDS	Unknown	--	335.00	--	335.0	ACTIVE
PEND OREILLE	406.20	112.40	1042.70	--	1561.3	DEAD + INACTIVE + ACTIVE
COEUR D'ALENE	--	13.50	225.00	--	238.5	INACTIVE + ACTIVE
PRIEST LAKE	20.00	28.00	71.30	--	119.3	DEAD + INACTIVE + ACTIVE
CLEARWATER BASIN						
DWORSHAK	--	1452.00	2007.00	--	3459.0	INACTIVE + ACTIVE
WEISER/BOISE/PAYETTE BASINS						
MANN CREEK	1.61	0.24	11.10	--	11.1	ACTIVE
CASCADE	--	50.00	653.20	--	703.2	INACTIVE + ACTIVE
DEADWOOD	1.50	--	161.90	--	161.9	ACTIVE
ANDERSON RANCH	29.00	41.00	423.18	--	464.2	INACTIVE + ACTIVE
ARROWROCK	--	--	286.60	--	286.6	ACTIVE
LUCKY PEAK	--	28.80	264.40	13.80	293.2	INACTIVE + ACTIVE
LAKE LOWELL	--	8.00	169.10	--	169.1	ACTIVE
WOOD/LOST BASINS						
MAGIC	--	--	191.50	--	191.5	ACTIVE
LITTLE WOOD	--	--	30.00	--	30.0	ACTIVE
MACKAY	0.13	--	44.37	--	44.4	ACTIVE
UPPER SNAKE BASIN						
HENRYS LAKE	--	--	90.40	--	90.4	ACTIVE
ISLAND PARK	0.40	--	127.30	7.90	135.2	ACTIVE + SURCHARGE
GRASSY LAKE	--	--	15.18	--	15.2	ACTIVE
JACKSON LAKE	--	--	847.00	--	847.0	ACTIVE
PALISADES	44.10	155.50	1200.00	--	1400.0	DEAD + INACTIVE + ACTIVE
RIRIE	4.00	6.00	80.54	10.00	80.5	ACTIVE
BLACKFOOT	--	--	348.73	--	348.7	ACTIVE
AMERICAN FALLS	--	--	1672.60	--	1672.6	ACTIVE
SOUTHSIDE SNAKE BASINS						
OAKLEY	--	--	77.40	--	77.4	ACTIVE
SALMON FALLS	48.00	--	182.65	--	182.6	ACTIVE
WILDHORSE	--	--	71.50	--	71.5	ACTIVE
OWYHEE	406.83	--	715.00	--	715.0	ACTIVE
BROWNLEE	0.45	444.00	975.30	--	1419.3	INACTIVE + ACTIVE
BEAR RIVER BASIN						
WOODRUFF NARROWS	--	1.50	57.30	--	57.3	ACTIVE
WOODRUFF CREEK	--	4.00	4.00	--	4.0	ACTIVE
BEAR LAKE	--	--	1421.00	--	1421.0	ACTIVE
MONTPELIER CREEK	0.21	--	3.84	--	4.0	DEAD + ACTIVE

Interpreting Streamflow Forecasts

Introduction

Each month, five forecasts are issued for each forecast point and each forecast period. Unless otherwise specified, all streamflows are for streamflow volumes that would occur naturally without any upstream influences. Water users need to know what the different forecasts represent if they are to use the information correctly when making operational decisions. The following is an explanation of each of the forecasts.

Most Probable (50 Percent Chance of Exceeding) Forecast. This forecast is the best estimate of streamflow volume that can be produced given current conditions and based on the outcome of similar past situations. There is a 50 percent chance that the streamflow volume will exceed this forecast value. There is a 50 percent chance that the streamflow volume will be less than this forecast value.

The most probable forecast will rarely be exactly right, due to errors resulting from future weather conditions and the forecast equation itself. This does not mean that users should not use the most probable forecast: it means that they need to evaluate existing circumstances and determine the amount of risk they are willing to take by accepting this forecast value.

To Decrease the Chance of Having Too Little Water

If users want to make sure there is enough water available for their operations, they might determine that a 50 percent chance of the streamflow volume being lower than the most probable forecast is too much risk to take. To reduce the risk of not having enough water available during the forecast period, users can base their operational decisions on one of the forecasts with a greater chance of being exceeded (or possibly some point in-between). These include:

70 Percent Chance of Exceeding Forecast. There is a 70 percent chance that the streamflow volume will exceed this forecast value. There is a 30 percent chance the streamflow volume will be less than this forecast value.

90 Percent Chance of Exceeding Forecast. There is a 90 percent chance that the streamflow volume will exceed this forecast value. There is a 10 percent chance the streamflow volume will be less than this forecast value.

To Decrease the Chance of Having Too Much Water

If users want to make sure they don't have too much water, they might determine that a 50 percent chance of the streamflow being higher than the most probable forecast is too much of a risk to take. To reduce the risk of having too much water available during the forecast period, users can base their operational decisions on one of the forecasts with a smaller chance of being exceeded. These include:

30 Percent Chance of Exceeding Forecast. There is a 30 percent chance that the streamflow volume will exceed this forecast value. There is a 70 percent chance the streamflow volume will be less than this forecast value.

10 Percent Chance of Exceeding Forecast. There is a 10 percent chance that the streamflow volume will exceed this forecast value. There is a 90 percent chance the streamflow volume will be less than this forecast value.

Using the forecasts - an example

Using the Most Probable Forecast. Using the example forecasts shown below, users can reasonably expect 36,000 acre-feet to flow past the gaging station on the Mary's River newa Deeth between March 1 and July 31.

Using the Higher Exceedance Forecasts. If users anticipate a somewhat drier trend in the future (monthly and seasonal weather outlooks are available from the National Weather Service every two weeks), or if they are operating at a level where an unexpected shortage of water could cause problems, they might want to plan on receiving only 20,000 acre-feet (from the 70 percent chance of exceeding forecast). In seven out of ten years with similar conditions, streamflow volumes will exceed the 20,000 acre-foot forecast.

If users anticipate extremely dry conditions for the remainder of the season, or if they detrmine the risk of using the 70 percent chance of exceeding forecast is too great, then they might plan on receiving only 5000 acre-feet (from the 90 percent chance of exceeding forecast). Nine out of ten years with similar conditions, streamflow volumes will exceed the 5000 acre-foot forecast.

Using the Lower Exceedance Forecasts. If users expect wetter future conditions, or if the chance that five out of every ten years with similar conditions would produce streamflow volumes greater that 36,000 acre-feet was more than they would like to risk, they might plan on receiveing 52,000 acre-feet (from the 30 percent chance of exceeding forecast) to minimize potential flooding problems. Three out of ten years with similar conditions, streamflows will exceed the 52,000 acre-foot forecast.

In years when users expect extremely wet conditions for the remainder of the season and the threat of severe flooding and downstream damage exists, they might choose to use the 76,000 acre-foot (10 percent chance of exceeding) forecast for their water management operations. Streamflow volumes will exceed this level only one year out of ten.

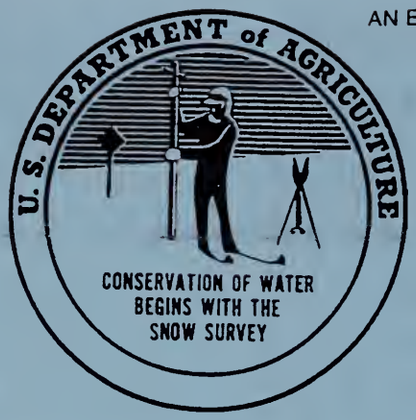
UPPER HUMBOLDT RIVER BASIN

STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	<--DRIER-- FUTURE CONDITIONS --WETTER--> Chance of Exceeding						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG)	30% (1000AF)	10% (1000AF)	25 YR (1000AF)
MARY'S RIVER	MAR-JUL	5.0	20.0	36	77	52	76	47
nr Deeth	APR-JUL	8.0	17.0	31	74	45	67	42
LAMOILLE CREEK	MAR-JUL	6.0	16.0	24	79	32	43	31
nr Lamoille	APR-JUL	4.0	15.0	22	75	30	41	30
NR HUMBOLDT RIVER at Devils Gate	MAR-JUL	6.0	12.0	43	73	74	121	59

For more information concerning streamflow forecasting ask your local NRCS field office for a copy of "A Field Office Guide for Interpreting Streamflow Forecasts".

AN EQUAL OPPORTUNITY EMPLOYER



USDA, Natural Resources Conservation Service
3244 Elder Street, Room 124
Boise ID 83705-4711

OFFICIAL BUSINESS

NATIONAL AGRICULTURAL LIBRARY
SERIAL RECORDS ROOM 002
10301 BALTIMORE BLVD
BELTSVILLE MD 20705-2351

Issued by

Paul W. Johnson
Chief
Natural Resources Conservation Service
U.S. Department of Agriculture

Released by

Luana E. Kiger
State Conservationist
Natural Resources Conservation Service
Boise, Idaho

Prepared by

Peter L. Palmer, Data Collection Office Supervisor
Philip S. Morrisey, Hydrologist
Ron Abramovich, Water Supply Specialist
Gini Broyles, Statistical Assistant
Bill J. Patterson, Electronics Technician
Jeff Graham, Electronics Technician